

1. A system that is capable of transmitting a displayable message to a terminating short message entity in more than one data package over a conveying network, the system comprising:

a capacity determiner that determines a capacity of the conveying network for transmitting data;

a fragmenter that divides the displayable message into fragments at an application protocol layer based on the capacity determined by the capacity determiner such that the size of the fragments does not exceed the capacity of the conveying network; and

a packager that packages the fragments into the data packages such that the data packages are operable to be separately transmitted by a short message service over the conveying network.

2. The system of claim 1, wherein the capacity determiner determines a number of octets in the displayable message that are operable to be transmitted in the data packages.

3. The system of claim 1, wherein the capacity determiner determines a number of bits in the displayable message that are operable to be transmitted in the data packages.

4. The system of claim 1, wherein the fragmenter divides the displayable message into n fragments such that $(n-1)$ of the fragments include an amount of data substantially equal to the capacity of the conveying network, and one of the fragments includes an amount of data less than the capacity of the conveying network.

5. The system of claim 1, wherein the data packages further include an indicia of the size of the displayable message and a reference parameter corresponding to the position of the fragments in the displayable message.

6. The system of claim 5, wherein the packager adds the indicia of the size of the displayable message and the reference parameter corresponding to the position of the fragment into the data packages.

7. The system of claim 1, wherein the data packages further include an indicia of the identity of the displayable message.

8. The system of claim 7, wherein the packager adds the indicia of the identity of the displayable message into the data packages.

9. The system of claim 1, wherein the packager identifies a reference parameter for the data packages corresponding to the position of the fragment with respect to other fragments in the displayable message.

Suba 3

10. The system of claim 1, wherein the capacity determiner determines the capacity based on a capacity indication from a serving wireless telecommunications network in the conveying network.

5 11. The system of claim 1, wherein the capacity determiner, the fragmenter and the packager comprise a displayable message center coupled to a serving wireless telecommunications network that transmits the displayable message to the wireless terminal.

12. A wireless telecommunications system that is capable of registering visiting wireless terminals associated with a different home location register, the system comprising:
a wireless switching center that is operable to receive calls and registration information from visiting wireless terminals through one of a plurality of base stations;

10

a visited location register coupled to the wireless switching center that is operable to provide an indicia of the capacity of the wireless system during a registration operation to the home location register of the wireless terminal for use in fragmentation and reassembly of displayable messages transmitted on a short message service that exceed the capacity of the system.

15

Suba 4

13. A system capable of transmitting a displayable message over a conveying network in more than one data package, the system comprising:

a fragmenter for dividing a displayable message having an amount of data greater than the capacity of the components of the conveying network into fragments each having an amount of data less than or equal to the capacity of the conveying network; and

20

a packager for packaging the fragments into multiple data packages, the data packages including a reference parameter corresponding to the position of the fragment in the displayable message.

14. The system of claim 13, wherein the packager identifies the reference parameter for the data packages corresponding to the position of the fragments with respect to other fragments in the displayable message.

25

15. A system capable of reconstructing a displayable message from multiple data packages transmitted over a conveying network with a short message service, the system comprising:

30 a fragment retriever for retrieving a fragment of a displayable message and a reference parameter from the data package wherein the size of the fragment is based on the capacity of the conveying network, the position of the fragment in the displayable message is determined

by the reference parameter retrieved from the data package for the fragment, the fragment retriever ordering the corresponding fragments according to the reference parameters retrieved from the data packages; and

a message reconstructor for assembling the fragments into the displayable message according to their reference parameter.

16. The system of claim 15, wherein the fragment retriever identifies the total amount of data in the displayable message from an indicia included in at least one data package.

17. The system of claim 15, wherein the fragment retriever sums the total amount of data in the data packages received and compares the sum with the indicia of the total amount of data included in the at least one data package.

18. A method capable of transmitting a displayable message over a conveying network in more than one data package, the method comprising:

determining a capacity of the components of the conveying network for transmitting data;

dividing the displayable message into fragments at the application protocol layer based on the capacity of the conveying network such that the size of the fragments does not exceed the capacity of the conveying network; and

packaging the fragments into the data packages such that the data packages are operable to be separately transmitted by a short message service over the conveying network, a data package including a reference parameter corresponding to the position of the fragment in the displayable message.

19. The method of claim 18, wherein the step of determining a capacity comprises the step of determining a number of characters in the displayable message that are operable to be transmitted in the data packages.

20. The method of claim 18, wherein the step of determining a capacity comprises the step of determining a number of bits in the displayable message that are operable to be transmitted in the data packages.

21. The method of claim 18, wherein the step of dividing the displayable message comprises dividing the displayable message into n fragments such that $(n-1)$ of the fragments include an amount of data equal to the capacity of the conveying network, and one of the fragments includes an amount of data less than the capacity of the conveying network.

22. The method of claim 18, and further comprising including an indicia of the size of the displayable message in the data packages.

23. The method of claim 18, and further comprising identifying a reference parameter for the data packages corresponding to the position of the fragment with respect to other fragments in the displayable message.

24. A method capable of reconstructing a displayable message from multiple data packages transmitted over a conveying network with a short message service, the method comprising:

retrieving a fragment of a displayable message a reference parameter from the data packages wherein the size of the fragments is based on the capacity of the conveying network, the position of the fragment in the displayable message determined by the reference parameter retrieved from the data package for the fragment, the fragment retriever ordering the corresponding fragments according to the reference parameters retrieved from the data packages; and

assembling the fragments into the displayable message according to their reference parameter.

25. The method of claim 24, wherein the step of retrieving comprises the step of identifying the total amount of data in the displayable message from an indicia included in the data packages.

26. The method of claim 24, wherein the step of retrieving comprises the step of summing the amount of data in the data packages received and compares the sum with the indicia of the total amount of data included in the data packages.